Obesity prevention advocacy in Australia: An analysis of policy impact on autonomy

Haynes, Emily; Hughes, Roger; Reidlinger, Dianne P.

Published in:
Australian and New Zealand Journal of Public Health

DOI:
10.1111/1753-6405.12660
10.1111/1753-6405.12660

Obesity prevention advocacy in Australia: an analysis of policy impact on autonomy

Emily Haynes,[1] Roger Hughes,[2] Dianne P. Reidlinger[1]

Abstract

Objective: To explore obesity policy options recommended by stakeholders and identify their impact on individual autotomy.

Methods: Qualitative and quantitative methods were used. A content analysis of submissions to the Australian Government's Inquiry into Obesity was conducted. Each recommendation was categorised by its impact on autonomy, according to existing frameworks. Chi-square test for independence was used to explore the association between autonomy and stakeholder support defined as frequency of recommendation.

Results: The extent of support for a policy option was significantly associated with impact on autonomy ($p<0.001$). Options that reduce autonomy were least frequently recommended in every setting; but more likely in schools (27%) than other settings (<1%). Recommendations to provide incentives (9%) were more common than disincentives (2%) or restrictions (3%), and those that enhance autonomy were most widely recommended (46%).

Conclusions: Stakeholders advocated policy options that enhance individual autonomy to a greater extent than those that diminish autonomy.

Implications for public health: Targeting obesity policy options that enhance rather than diminish autonomy may be more politically acceptable across most settings, with the exception of schools where more restrictive policy options are appropriate. Re-framing options accordingly may improve leadership by government in obesity policy.

Key words: obesity, policy, Nuffield, public health, intrusiveness, autonomy, review

It is widely accepted that elected governments have a primary responsibility to protect and promote the public health.[1,2] The adequacy of government health policy is often determined by the politics of policy formulation, policy implementation and resource allocation, significantly influenced by advocacy from often competing and vested interest groups.[3] The World Health Organization supports government policy as an instrument for intervention in the interest of obesity prevention.[4] Delivering well-aligned, national, regional and local policy action is imperative to enable supportive environments for targeted intervention.[4,5]

Despite a plethora of national and global policy recommendations addressing obesity prevention, Australia remains without an extant national obesity strategy, and the majority of objectives of the most recent preventative health strategy, which relate to healthy weight, diet and physical activity, remain largely unimplemented.[6] At state and local level, policy development and implementation has shown more promise,[7,8] however, there is inconsistency between states and an absence of a coordinated national policy response to obesity. This is at odds with the well-resourced and highly coordinated lobbying efforts of the food and beverage industry.[9]

The Australian Government has a track record of success in reducing high-risk health behaviours through national legislation, despite the difficulties associated with legislating in the interest of public health, often in direct conflict with other, largely commercial interests.[10] Legislation has been successfully applied to promote smoking cessation, reduce drink driving and introduce compulsory seatbelt use.[11] To date there has been limited enthusiasm by Government to apply similar policy instruments to address obesity, mostly been confined to a low-level, self-regulatory approach that emphasises personal responsibility.[12,13] This approach aligns with the advocacy position of commercial interests, which lobby for deregulation, unrestricted marketing practices and against government protections for consumers.[9,10]

While prevention efforts have been focused on individual behaviour change for obesity, concerns have arisen about the unintended consequences of such an approach on vulnerable populations, specifically children and low-income communities. The focus on individual responsibility has been proposed as a threat to effective prevention, through unhelpful stigmatisation.[14] Further, the adoption of interventions with a narrow definition of health (focused on weight, rather than a more holistic view of health), has been associated with an increase in disordered eating behaviours, and has resulted in further prevention efforts to normalise body image and eating behaviour in young people.[15] Of great concern is the potential

1. Faculty of Health Sciences and Medicine, Bond University, Queensland
2. School of Public Health, Massey University, New Zealand
Correspondence to: Miss Emily Haynes, Faculty of Health Sciences and Medicine, Bond University, Promethean Way, Robina, QLD 4226; e-mail: ehaynes@bond.edu.au
Submitted: August 2016; Revision requested: November 2016; Accepted: December 2016
The authors have stated they have no conflict of interest.

Aust NZ J Public Health. 2017; Online; doi: 10.1111/1753-6405.12660

to exacerbate existing inequalities in health across the socioeconomic gradient where interventions may impose a larger burden on those most disadvantaged, for example taxes on unhealthy foods.[16] Interventions focused on information and knowledge have been demonstrated to be less effective for people from lower socioeconomic positions and more likely to widen health inequalities.[17] A comprehensive systems approach that encompasses all dimensions of the socio-ecological model and individuals' interactions with the systems operating within the environment, is supported by public health advocates to avoid some of these unintended harms.[18,19] In Australia, this requires an inclusive package of local, state and national policy actions. However, a lack of policy leadership by government and the associated lack of accountability to government by stakeholder groups is recognised as a primary barrier to progress in obesity prevention.[19]

The policy-making process by government is not always a linear or rational process, often deviates from expert health opinion and to varying degrees is influenced by advocacy.[3] In a political environment with conflicting interests, policy makers can be constrained by a lack of evidence; a recognised barrier to government policy development and implementation.[3,20,21] In the context of obesity, the evidential 'gaps' have been attributed to the complexity of implementing population-wide pragmatic interventions without justifiable evidence, or a result of poor translation and dissemination from science to politics.[22-25] There is insufficient evidence on the effectiveness of obesity policy itself,[5,22] and it has been claimed that published evidence on the effect of obesity interventions generally has little relevance to policy makers.[24] Therefore, regardless of the significance of research findings, policy change may not be established, particularly where political and public will is lacking.[3,26]

Despite these complexities, government-led policy is necessary.[19] Where the best 'possible' evidence is not obtainable, stakeholder opinion may be valued as the best 'available'.[27] One mechanism used by Australian governments to achieve best available evidence is to formalise a government inquiry, such as the last Australian Government Inquiry on Obesity in 2008.[28] The aim of such an inquiry is to explore stakeholder perspectives to inform policy decisions, however, the significance of this in practice is under-explored.

Given the complexity and uncertainty relating to policy interventions to address obesity, conceptual frameworks that help to interpret the function, effect and implementation of policy are important. A number of tools have been proposed and applied to interpret obesity policy options. One such Obesity Policy Framework[5] categorises policies as downstream or upstream; downstream being those that 'improve the ability for individuals to make appropriate healthy choices' and 'upstream' measures being those that 'increase the opportunities to make healthier choices or restrict the counteracting influences on healthy choice making'.[5,29] The Nuffield Council on Bioethics describe a similar concept, and categorise policy intervention by the level of intrusiveness to individual choice.[2] They suggest public health policy can be categorised across an escalating 'Ladder' of eight levels of intrusiveness, from doing nothing to restricting or eliminating choice, and several of these levels are reflected in food policy frameworks.[30-32] The Nuffield Council suggest that high-level, restrictive, upstream policies require greater evidence to justify and may be less publicly and politically acceptable than lower level options.[33] Recent research suggests that these 'types' of high-level intrusive policy may have a greater impact on obesity-related outcomes than lower level informative strategies.[22]

A recent modification to the Nuffield Ladder proposes that restrictive policies diminish individual autonomy, which in turn influences the degree of ethical concern around implementation.[34] The Griffiths and West's framework (known as the Balanced Ladder of Intervention) assigns positive and negative numerical values to the Nuffield Ladder rungs to describe the influence to autonomy of interventions focused at different levels, which can be further collapsed to a simple 5-point autonomy scale (Table 1).

The general concern about developing a 'nanny state' and intruding on individual choice, has been used to avert government regulation and environmental change to address obesity world-wide.[35] Given that the focus of criticism about government intervention has been on individual freedom,

Table 1: Description of the different categorisation levels of the Nuffield Ladder[a] and Balanced Ladder[b] of intervention, with examples.

Nuffield Ladder level[a] (intrusiveness)	Balanced ladder level[b] (impact on autonomy)	Pooled level of impact on autonomy (for this review)	Example description[1]
Eliminate	-4	-2 Diminish	*Eliminate choice* – Regulate in such a way as to entirely eliminate choice, e.g. compulsory isolation of patients with infectious diseases.
Restrict	-3		*Restrict choice* – Regulate in such a way as to restrict the options available to people with the aim of protecting them, e.g. removing unhealthy ingredients from foods, or unhealthy foods from shops or restaurants.
Disincentives	-2	-1 Reduce	*Guide choice through disincentive* – Fiscal and other disincentives to influence people not to pursue certain activities, e.g. taxes on cigarettes or discouraging the use of cars in inner cities through charging schemes or limitations of parking spaces.
Incentives	-1		*Guide choice through incentive* – Regulations that guide choices by fiscal and other incentives, e.g. tax-breaks for the purchase of bicycles that are used to travel to work.
Do nothing	0	0 Neutral	*Do nothing or simply monitor the situation*
Change the default	0		*Guide choice through changing the default policy* – e.g., in a restaurant, instead of providing chips as a standard side dish (with healthier options available) menus could be changed to provide a more healthy option as standard (with chips as an option available).
Inform	+1	+1 Increase	*Provide information* – inform and educate the public, e.g. campaigns that inform people of the health benefits of specific behaviours.
	+2		*Educate for autonomy* – e.g. a media studies curriculum that shows children how to recognise the techniques used to manipulate choice through marketing or by banning marketing primary targeted at children.
	+3	+2 Enhance	*Ensure choice is available* – e.g. requiring that menus contain items that someone seeking to maintain their health would be likely to choose.
Enable	+4		*Enable choice* – Enable individuals to change their behaviours, e.g. by offering participation in a NHS 'stop smoking' program, building cycle lanes or providing free fruit in schools.
	+5		*Collective self-binding* – e.g. a decision by a community, after debate and democratic decision making, to ban the local sale of alcohol.

a: Nuffield Council (2007); b: Griffiths & West (2015).

evaluating policy options in terms of the impact on individual autonomy is worthwhile as it allows the exploration of whether some 'intrusive' interventions (according to the Nuffield Ladder) may in fact be necessary to increase autonomy (according to the Balanced Ladder) and challenges the concept that any intervention necessarily comes at a cost to autonomy.[34]

In the absence of sufficient evidence on the effectiveness of obesity policy[5,22] guidance is required to inform ethical decision making, prioritise action and support implementation monitoring programs.[32] The concept of autonomy aligns with constructs traditionally regarded as important in the development, implementation and evaluation of obesity prevention interventions[29,31,36,37] and may provide a valuable framework for classifying obesity policy options.

Objective

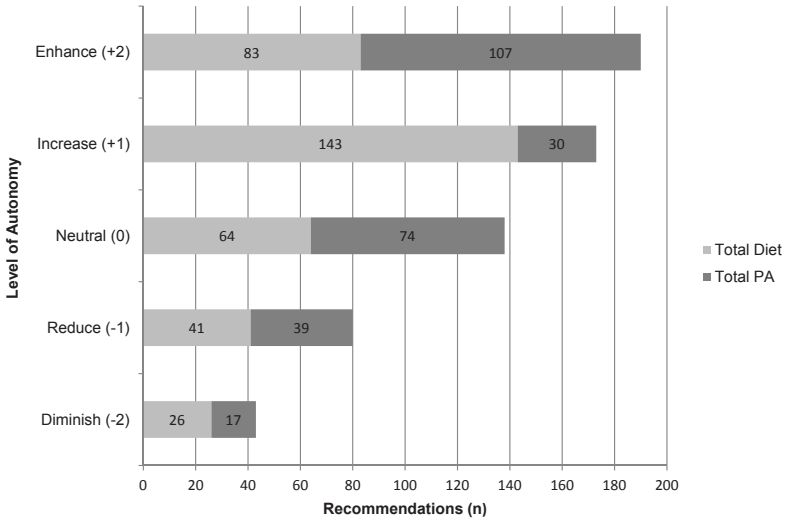
This study's aim was to explore the feasibility of classifying stakeholder policy submissions according to their impact on individual autonomy,[2,34] and to consider the application of the different levels of autonomy on government-led obesity policy development, implementation and evaluation.

Method

This study involved a review and document analysis of 158 publicly accessible submissions to the Australian Government Inquiry into Obesity (2008). This Inquiry was identified as the most recent, relevant, comprehensive and concise database of stakeholder advocacy related to obesity in Australia in the last decade. All submissions made to the Inquiry were obtained in text format. Where reference was made to supporting information, documents were obtained and analysed in accordance with the relevant submission.

Directed content analysis was performed independently (EH) via repeated readings and extraction of explicit recommendations from each submission. Quotes and summaries were extracted for analytical triangulation by the research team. From 158 submissions, a total of 1,092 discrete recommendations were extracted and charted (Supplementary Figure 1). Only recommendations concerning primary and/or secondary prevention measures were included for analysis; those related to clinical treatment, including surgery or pharmaceutical interventions, were excluded.

Figure 1: Distribution of recommendations according to target behaviour and level of autonomy (n).



Data analysis

A mixed-method analytical approach was employed in line with existing approaches to public health research.[38-41] Content analysis was used, given its relevance to deductive methodology,[42] to isolate and then categorise recommendations through the frameworks of the Nuffield Ladder and the Balanced Ladder.[34] Categories were collapsed from these frameworks to develop levels for the coding framework (Table 1, Supplementary Figure 2) and where sufficiently detailed, data was coded by setting and target behaviour (Supplementary Figure 2); those too ambiguous were coded as 'other'.

Researcher triangulation was applied to enhance the quality and credibility of the categorical analysis. Discrepancies in categorisation between researchers were resolved through discussion and agreement.

Data that did not align with pre-defined codes was identified and later analysed further, in accordance with a directed approach to content analysis.[42] Where similarity was interpreted between these recommendations, an additional ladder level was developed. These recommendations encompassed a mutual category of building capacity for effective implementation; they were deemed to have a negligible impact on individual's autonomy and impart little intrusion to individual choice. The additional 'rung' was subsequently defined as 'building capacity', assigned as neutral (0) for both the Ladders, and options were coded accordingly.

Finally, given the value of applying descriptive quantitative analysis to summarise the data,[43] data was summarised using frequencies and the proportions for each level of autonomy were calculated. Chi-square test for independence was employed as a non-parametric statistical test to explore significance ($p<0.05$) between levels recommended using SPSS Statistics for Windows (Ver 23.0. IBM, New York).

Results

A total of 1,131 discrete recommendations were extracted from 158 advocacy submissions (mean of seven recommendations per submission). Thirty-nine (<4% of total) were excluded as obesity treatment recommendations (See Supplementary Figure 1) and 1,092 were extracted and analysed through the content analysis framework (See Supplementary Figure 2). Of this total, 931 (85%) could be categorised by their level of intrusiveness and influence to autonomy (Table 1). A number of recommendations offered general guiding principles or a recommended approach to policy making rather than discrete recommendations and therefore were too ambiguous to classify through the framework (15%, n=165; coded as 'unclassified').

With regard to setting, 10% (n=89) were recommended for schools, 4% (n=36) for workplace and 81% (n=751) for community implementation; 6% (n=55) could not be classified by setting.

Of those that could be classified by behaviour (n= 624; Supplementary Figure 1), significantly greater number of

recommendations were made for dietary intervention (57%; n=357) than physical activity (n=267; 43%; $p<0.05$). However, for workplace interventions (Figure 2), recommendations to target physical activity (78%) were made more frequently than those associated with dietary behaviours (22%; $p<0.05$).

There was a significant association between the impact to autonomy and the frequency of recommendation ($p<0.001$). Recommendations that increase autonomy (46%; n=426) were more frequently recommended than those that reduce autonomy (14%; n=146), or those that have a negligible influence (38%; n=355; $p<0.005$) (Figure 1).

Setting and autonomy

There was a significant association between the impact to autonomy and setting ($p<0.001$; Figure 2). Recommendations that reduce autonomy were the least frequently recommended in every setting; but were more frequently recommended in schools (28%; n=26) than in the work place (8%; n=3) or community (15%; n=117) ($p<0.005$) (Figure 2). Only 3% (n=43) of the total recommendations diminished autonomy to the greatest extent by restricting choice and of these 78% (n=25) were recommended for implementation in schools. Restricting choice was the second most frequently recommended level of intrusiveness for school interventions (28% of school recommendations, n=25), but was infrequently suggested for the workplace (0) or community (1%; n=18).

Options that increase autonomy in the community setting, accounted for 40% of total recommendations (n=372). Promoting autonomy to the greatest extent by enabling choice, accounted for over a quarter of recommendations within each setting; including school (24%; n=21), community (24%; n=173) and workplace suggestions (50%; n=18) (Figure 2).

Options that had a negligible influence on autonomy were frequently recommended (38%; n=355). Those that 'build capacity' were most frequently recommended (29%; n=268), however the value of monitoring and surveillance was widely recognised (8%; n=77), particularly for community-wide implementation (81% of all monitoring recommendations).

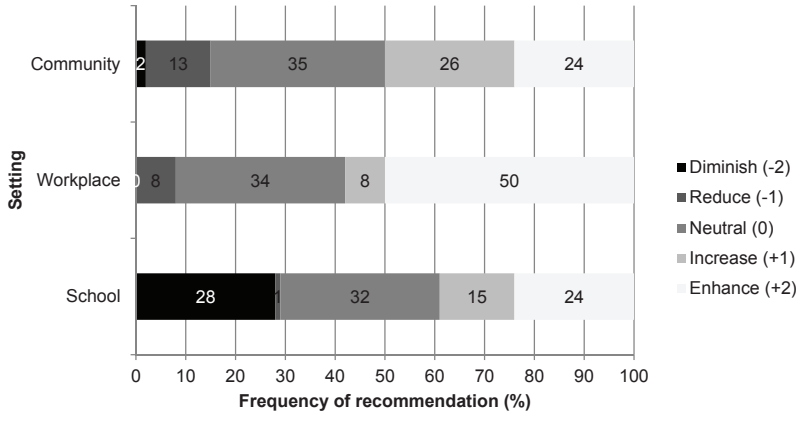
Among the options that reduce autonomy, providing incentives (9%; n=85) was more frequently recommended than providing disincentive (2%; n=18) or restricting choice (5%, n=43). Incentives were more frequently suggested for community (n=81) and work place (n=3) than in the school setting (n=1; $p<0.005$) and for physical activity (n=37) more than diet (n=26). Disincentives were not recommended by any submission for the school or workplace, and infrequently among community suggestions (2%; n=18). The majority of suggested disincentives were to influence dietary choice (83%; $p=<0.005$), such as taxing unhealthy foods.

Target behaviour and autonomy

There was a significant association between impact to autonomy and target behaviour ($p<0.001$). Enhancing autonomy to the greatest extent, by enabling choice, was frequently recommended for physical activity-related options (40%), while increasing autonomy to a lesser extent by informing choice was most highly suggested for dietary options (40%). Among all recommendations to inform choice, 68% were diet-related and14% activity-related. Among all recommendations to enable choice, 51% were activity-related and 38% diet-related. However, recommendations to diminish autonomy to the greatest extent were more common for diet (61%) than activity behaviours (39%; $p<0.001$).

Those recommendations that could not be classified by the frameworks of intrusiveness or autonomy (Supplementary Figure 1) were categorised as 'guiding principles/general approaches for policy making', and frequently emphasised the importance of collaborative working, a multi-sector comprehensive approach, and identification of priority target groups. A small number (n=7) of 'negative' recommendations were identified, whereby the submitter actively recommended against a stated intervention. Of these, the majority (n=6) opposed diet-related disincentives, incentives and marketing restrictions.

Figure 2: Proportion* of recommendations within settings.



*Proportions were calculated from the total of those classifed by level (n=931)

Discussion

This study set out to explore the feasibility of classifying and assessing stakeholder policy advocacy according to impact on autonomy.[34] The results demonstrate that impact on autonomy is a relevant concept to the framing and analysis of government-led intervention for addressing obesity. Further, the specific application of the Nuffield Ladder of Intervention[2] and the Balanced Ladder of Intervention[34] to obesity policy options proposed by stakeholders demonstrates the relevance of the frameworks to real-world obesity policy advocacy.

A key finding was the significant association between the impact to autonomy, and stakeholder support. Interventions that increase individual autonomy were more frequently recommended, than those that reduce or have a negligible influence on autonomy. This direction of preference reflects resistance to the notion of developing a 'nanny state', which to date, has increased resistance toward government-led regulation.[44] Previous research supports that enabling or informing choice (approaches which enhance autonomy), may be more acceptable forms of public health intervention,[33] and their value has been recognised globally within research and public health directives.[4,30,31,45] These strategies that balance choice architecture have been implemented at state level in Australia,[8,46] and are recognised as important

by stakeholders internationally,[29] despite a lack of evidence from national-level trials to support their effectiveness.[22] The findings of this analysis supports the preference for interventions which enhance individual autonomy, among stakeholders in Australia.

In terms of the different strategies that increase autonomy, informing choice is recognised as integral to addressing obesity and the most prolifically implemented level to date.[47-49] Educational interventions, however, have been insufficient as a stand-alone strategy with their effectiveness dependent on access, availability and opportunity for healthy choice.[29,49,50] By contrast, far less attention has been paid to enhancing autonomy to a greater extent, through modifying environments to enable healthy preference learning or convenience of healthy choice,[30] despite their potential feasibility, cost effectiveness and role in dismantling the impact of socioeconomic inequality on healthy choice.[22,29,51,52] A large proportion of those that have been implemented have remained voluntary and self-regulated, which serves to undermine the effectiveness of such strategies.[53-55] Policies that target commercial organisations and public services with a voluntary approach may incite less resistance; as a lack of legislative obligation around the extent of implementation may be considered less intrusive. However, the subsequent impact that the policy has on *individual's* autonomy, once implemented, is indifferent; highlighting how policy can be variably intrusive to stakeholder groups.

Regulation or restriction

The current framing of regulation in public health policy may understate its positive influence on individual autonomy. Therefore the definitions of regulation and restriction, in the context of obesity prevention policy, may require greater transparency. The Balanced Ladder provides an illustration of how regulation, restriction and autonomy interrelate, which can be readily applied to public health policy, as confirmed in this study. The analysis highlighted a number of policy examples that were identified as restrictive to industry and services; regulation around advertising and marketing including food labelling, restrictions to the type and frequency of unhealthy food outlets within suburbs, healthy food procurement and regulation around portion size; however, when classified through the Balanced Ladder framework these examples increase individual autonomy.

Where regulation to restrict commercial organisations from promoting unhealthy choice reduces *industry* autonomy; the same may enhance *individual's* autonomy to make fair choice.

Viewing regulatory public health policy through an *individual* autonomy lens contrasts with the underlying principles of popular frameworks, such as Nuffield's Ladder, which classifies 'doing nothing' as promoting freedom to the greatest extent. This position ignores the impact of regulatory policies on rebalancing the 'obesogenic' environment, which enhances individual autonomy. The current rhetoric merges the terms regulation and restriction, which may result in consumer misunderstanding around the intrusiveness of regulatory policy. Such misconceptions may be promoted indirectly through resistance and lobbying from industry, to reduce public will when regulation around unhealthy food has been proposed, and could well account for the lack of implementation of regulative or legislative tools in Australia and elsewhere.[3,12]

Tailoring through autonomy

The association between impact to autonomy and support from stakeholders was influenced by setting and target behaviour. In this analysis, the school setting was subject to a significantly greater proportion of restrictive recommendations than any other setting, which suggests greater acceptability of restriction when targeting children. The acceptability of restrictive interventions for public health is suggested to be inversely associated with age and is further influenced by whether the individual themselves will be directly affected by policy.[33]. Furthermore, the majority of trials exploring restrictive strategies have been conducted in schools setting,[22] supporting the utility of tailoring the options proposed, in terms of their impact to autonomy, according to setting.

The recommendations that relate to diet had lesser impact on autonomy than the physical activity-related option. This finding points to the importance of health policy leadership that recognises the conflicting interests of stakeholders. Policies to promote physical activity generally do not have to contend with large commercial interests, while dietary interventions that promote individual autonomy to the highest degree are likely to simultaneously diminish the autonomy of 'Big Food' companies. Powerful lobbying against food provision regulations,[9] may account for some of the variance in support shown in this analysis between diet and physical activity options, and further suggests that clarifying the positive influence to consumers of food regulation should be a priority.

Strengths and limitations

This research provides a pragmatic, applied insight into real-world advocacy for government-led policy to address obesity in the Australian context. The analysis of submissions made to the inquiry provided a nationally relevant sample representing the diversity of stakeholders to obesity in a readily available format for analysis.

In identifying limitations, the authors acknowledge the date of the Inquiry, which was the most recent federal inquiry in Australia; however, scarce implementation of fundamental components of the Australian preventative health strategy developed in response to this Inquiry, supports the ongoing relevance of understanding barriers to implementation to advance progress toward national health targets.[6,56] Furthermore, a comparison to recommendations made in recent national and global advocacy[4,57] illustrates clear alignment with current stakeholder advocacy.

The analysis explores the impact on autonomy, setting and behaviour as variables to obesity prevention interventions. While the association between these variables and stakeholder support is remarkable, the independent influence of autonomy on support should be interpreted with caution. A number of policy characteristics are acknowledged as contributors to acceptability,[33] and therefore the concept should be valued as an addition to the larger portfolio of drivers to acceptability public health policy.

The sample used in the analysis was confined to stakeholders who were motivated to submit to the government Inquiry. The use of a sample from alternative methods that engage consumers, such as public opinion surveys,[58] may have resulted in wider representation of stakeholders including individuals less likely to contribute to a formal government inquiry, such as children. However, the submissions provided an engaged, information-rich sample, which aligns with the primary objective of this

research: to explore recommendations made directly to the Australian Government Inquiry.

Analysis of stakeholder policy advocacy does not provide intelligence about the most effective or efficient policy responses to address obesity. It does provide insights about political acceptability and the various vested interests that influence policy responses. Both the framework and theory applied in this study are subject to interpretation of the concepts described, and therefore further investigation into stakeholder perceptions of the concept of autonomy and intrusion to choice is required.

Conclusion and Implication

Seven years on, the majority of the recommendations made to the Government Inquiry into Obesity have not been implemented, despite aligned recommendations in recent state-level priority-setting efforts.[57] The findings of this study validate the utility of the impact on autonomy, as proposed by the Balanced Ladder framework, for assessing obesity-related policy options. Viewing the options through an autonomy lens may predict stakeholder resistance, and the interplay of setting and target behaviour in the association between autonomy and acceptability gives rise to further opportunity to explore policy options tailored to these variables. Re-framing regulation according to *individual* and *industry* autonomy may be a valuable driver for systems change.[19] Further research around stakeholders' interpretation of these concepts is required to gain greater insight into the role of autonomy as a barrier to implementation, and as a key point of difference between stakeholder group perspectives.

References

1. European Association for the Study of Obesity. *World Health Assembly 2016: A Historic Breakthrough for Child Nutrition* [Internet]. Letter to Margaret Chan and WHO Executive Board Members. London (UK): World Obesity; 2015 [cited 2016 Jan]. Available from: http://www.worldobesity.org/site_media/uploads/DG_Chan_Child_Nutrition_Letter-December2015.pdf
2. Nuffield Council on Bioethics. *Public Health: Ethical Issues* [Internet]. London (UK): Nuffield Council; 2007 [cited 2016 Jan]. Available from: http://nuffieldbioethics.org/project/public-health/
3. Cullerton K, Donnet T, Lee A, Gallegos D. Playing the policy game: A review of the barriers to and enablers of nutrition policy change. *Public Health Nutr*. 2016;19(14):2643-53.
4. Commission on Ending Childhood Obesity. *Consultation on Draft Implementation Plan: Open Until 12 October 2016* [Internet]. Geneva (CHE): World Health Organisation; 2016 [cited2016 Feb]. Available from: http://www.who.int/end-childhood-obesity/en/
5. Sacks G, Swinburn B, Lawrence M. A systematic policy approach to hanging the food system and physical activity environments to prevent obesity. *Aust New Zealand Health Policy*. 2008;5(5):13.
6. National Preventative Health Taskforce. *Australia: The Healthiest Country by 2020- Technical Report 1: Obesity in Australia, a Need for Urgent Action* [Internet]. Canberra (AUST): Australian Government Department of Health; 2009 [cited 2106 Mar]. Available from: http://www.health.gov.au/internet/preventativehealth/publishing.nsf/content/E233F8695823F16CCA2574DD00818E64/$File/obesity-jul09.pdf
7. State Government Victoria. *Healthy Together Victoria* [Internet]. Melbourne (AUST): State Government of Victoria; 2015 [cited 2016 Mar]. Available from: http://www.healthytogether.vic.gov.au/aboutus/index
8. New South Wales Ministry of Health. *NSW Healthy Eating and Active Living Strategy: Preventing Overweight and Obesity in New South Wales 2013-2018* [Internet]. Sydney (AUST): State Government of New South Wales; 2013 [cited 2016 Mar]. Available from: http://www.health.nsw.gov.au/heal/Publications/nsw-healthy-eating-strategy.pdf
9. Nestle M. *Food Politics: How the Food Industry Influences Nutrition and Health*. Revised ed. Berkeley (CA): University of California Pres; 2007.
10. Brownell KD, Warner KE. The perils of ignoring history: Big Tobacco played dirty and millions died. How similar is Big Food? *Milbank* Q. 2009;87(1):259–94.
11. Australian National Preventative Health Agency. Australia: A leader in prevention. In: *State of Preventative Health 2013*. Report to the Australian Government Minister for Health. Canberra (AUST): Australian Government Department of Health; 2013. p. 17-35.
12. Swinburn B, Wood A. Progress on obesity prevention over 20 years in Australia and New Zealand. *Obes Rev*. 2013;14):60-8.
13. Reeve B, Jones A. Time to commit to good food policy. In: *MJA Insight* [Internet]. Newtown (AUST): Australasian Medical Publishing Company; 2016 July 4;25 [cited 2016 Jul 31]. Available from: https://www.mja.com.au/comment/20871
14. Puhl RM, Heuer CA. Obesity stigma: Important considerations for public health. *Am J Public Health*. 2010;100(60:1019–28.
15. O'Dea JA. Prevention of child obesity: 'First, do no harm'. *Health Educ Res*. 2005;20(2):259–65.
16. Thow AM, Jan S, Leeder S, Swinburn B. The effect of fiscal policy on diet, obesity and chronic disease: A systematic review. *Bull World Health Organ*. 2010;88:609–14.
17. Backholer K, Beauchamp A, Ball K, Turrell G, Martin J, Woods J, et al. A framework for evaluating the impact of obesity prevention strategies on socioeconomic inequalities in weight. *Am J Public Health*. 2014;104(10):e43-e50.
18. Peeters A, Backholer K. Reducing socioeconomic inequalities in obesity: The role of population prevention. *Lancet Diabetes Endocrinol*. 2015;3(11):838–40.
19. Swinburn B, Kraak V, Rutter H, Vandevijvere S, Lobstein T, Sacks G, et al. Strengthening of accountability systems to create healthy food environments and reduce global obesity. *Lancet*. 2015;385:2534-45.
20. Lang T, Rayner G. Overcoming policy cacophony on obesity: An ecological public health framework for policymakers. *Obes Rev*. 2007;8(1):165-81.
21. Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: A fundamental concept for public health practice. *Annu Rev Public Health*. 2009;30:175-201.
22. Mayne SL, Auchincloss AH, Micheal YL. Impact of policy and built environment changes on obesity-related outcomes: A systematic review of naturally occurring experiments. *Obes Rev*. 2015;16(5):362-75.
23. Tricco AC, Cardoso R, Thomas SM. Barriers and facilitators to uptake if systematic reviews by policy makers and health care managers: A scoping review. *Implement Sci*. 2016;11(4):1-20.
24. Kite J, Indig D, Mihrshahi S, Milat A, Bauman A. Assessing the usefulness of systematic reviews for policymakers in public health: A case study of overweight and obesity prevention interventions. *Prev Med*. 2015;81:99-107.
25. Yoong SL, Wolfenden L, Clinton-McHarg T, Waters E, Pettman TL, Steele E, et al. Exploring the pragmatic and explanatory study design on outcomes of systematic reviews of public health interventions: A case study on obesity prevention trials. *J Public Health*. 2014;36(1):170-6.
26. Fielding JE, Briss PA. Promoting evidence-based public health policy: Can we have better evidence and more action? *Health Aff*. 2006;25(4):969-78.
27. Muir Gray JA. *Evidence-based Healthcare: How to Make Health Policy and Management Decisions*. London (UK): Churchill Livingstone; 1997.
28. House Standing Committee on Health and Ageing. *Inquiry into Obesity in Australia* [Internet]. Canberra (AUST): Parliament of Australia; 2008 [cited 2015 Jan]. Available from: http://www.aph.gov.au/Parliamentary_Business/Committees/House_of_representatives_Committees?url=haa/./obesity/index.htm
29. Millstone E, Lobstein T. The PorGrow project: Overall cross-national results, comparisons and implications. *Obes Rev*. 2007;8 Suppl 2:29-36.
30. Hawkes C, Smith TG, Jewell J, Wardle J, Hammond RA, Friel S, et al. Smart food policies for obesity prevention. *Lancet*. 2015;385:2410-21.
31. Hawkes C, Jewell J, Allen K. A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: The NOURISHING framework. *Obes Rev*. 2013;14(2):159-68.
32. Swinburn B, Sacks G, Vandevijvere S, Kumanyike S, Lobstein T, Neal B, et al. INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): Overview and key principles. *Obes Rev*. 2013;14 Suppl 1:1-12.
33. Diepeveen S, Ling T, Suhrcke M. Public acceptability of government intervention to change health-related behaviours: A systematic review and narrative synthesis. *BMC Public Health*. 2013;13:756.
34. Griffiths PE, West C. A balanced intervention ladder: Promoting autonomy through public health action. *Public Health*. 2015;29:1092-98.
35. Crampton P, Hoek J, Beaglehole R. Leadership for health: Developing a canny nanny state. *N Z Med J*. 2011;124(139):66-72.
36. Swinburn B, Gill T, Kumanyika S. Obesity prevention: A proposed framework for translating evidence into action. *Obes Rev*. 2005;6:23-33.
37. National Public Health Partnership. *An Intervention Portfolio to Promote Fruit and Vegetable Consumption: Part 1: The Process and Portfolio* [Internet]. 2nd ed. Melbourne (AUST): NPNP; 2001 [cited 2016 Mar]. Available from: www.nphp.gov.au.
38. Richards Z, Thomas SL, Randle M, Pettigrew S. Corporate social responsibility programs of Big Food in Australia: A content analysis of industry documents. *Aust N Z J Public Health*. 2015;39(6):550-6.
39. Gicevic S, Aftosmes-Tobio A, Manganello JA, Ganter C, Simon CL, Newlan S, et al. Parenting and childhood obesity research: A quantitative content analysis of published research 2009-2015. *Obes Rev* 2016;17(8):724-34.
40. Brown I, Gould J. Decisions about weight management: A synthesis of qualitative studies of obesity. *Clin Obes*. 2011;1:99-109.
41. Richie J, Spencer L. Qualitative data analysis for applied policy research. In: Bryman A, Burgess RG, editors. *Analysing Qualitative Data*. Routledge. Oxon(UK): Routledge; 1994. p. 173-94.
42. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277-88.
43. Goulden R, Corcker E, Evans-Lacko S, Rose D, Thornicroft G, Henderson C. Newspaper coverage of mental illness in the UK 1992-2008. *BMC Public Health*. 2011;11:796.
44. Magnusson RS. Case studies in nanny state name-calling: What can we learn? *Public Health*. 2015;129:1074-82.
45. World Health Organization. *The Ottawa Charter for Health Promotion* [Internet]. Geneva (CHE): WHO International; 1986 [cited 2016 Mar]. Available from: http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index4.html

46. Australian Capital Territory Department of Health. *Towards Zero Growth: Healthy Weight Action Plan* [Internet]. Canberra (AUST): ACT Government; 2013 [cited 2016 Feb 10]. Available from: http://www.health.act.gov.au/sites/default/files/Towards%20Zero%20Growth%20Healthy%20Weight%20Action%20Plan.pdf
47. Fransen GA, Koster M, Molleman GR. Towards an integrated community approach of overweight prevention: The experiences of practitioners and policymakers. *Fam Pract*. 2012;29:104-9.
48. Sobol-Goldberg SJ, Rabinowitz J, Gross R. School-based obesity prevention programs: A meta-analysis of randomized controlled trials. *Obesity*. 2013;21:2422-8.
49. Jabs J, Devine CM, Bisogni CA, Farrell TJ, Jastran M, Wethington E. Trying to find the quickest way: Employed mothers' constructions of time for food. *J Nutr Educ Behav*. 2007;39(1):18–25.
50. Lake A, Chan M. Putting science into practice for early child development. *Lancet*. 2015;385:1816-17.
51. Sacks G, Veerman JL, Moodie M, Swinburn B. 'Traffic-light' nutrition labelling and 'junk-food' tax: A modelled comparison of cost-effectiveness for obesity prevention. *Int J Obes*. 2011;35:1001-9.
52. Dalton AM, Jones A, Ogilvie D, Petticrew M, White M, Cummins S. Using spatial equity analysis in the process evaluation of environmental interventions to tackle obesity: The healthy towns programme in England. *Int J Equity Health*. 2013;12:43.
53. Vandevijvere S, Swinburn B. Time to move beyond industry self-regulation of food marketing in New Zealand. *N Z Med J*. 2015;128:1423.
54. Sharma L, Teret S, Brownell K. The food industry and self-regulation: Standards to promote success and to avoid public health failures. *Am J Public Health*. 2010;100(2):240-6.
55. King L, Hebden L, Grunseit A, Kelly B, Chapman K, Venugopal K. Industry self-regulation of television food advertising: Responsible or responsive? *Int J Pediatr Obes*. 2011;6(2):390-8.
56. Moodie RA, Tolhurst P, Martin JE. Australia's health: Being accountable for prevention. *Med J Aust*. 20164;204(6):223-5.
57. VicHealth. *Victoria's Citizens' Jury on Obesity Insights Report 2016* [Internet]. Melbourne (AUST): Victorian Health Promotion Foundation. 2016 [cited 2016 Feb 10]. Available from: https://www.vichealth.vic.gov.au
58. Barry CL, Niederdeppe J, Gollust SE. Taxes on sugar-sweetened beverages: Results from a 2011 national public opinion survey. *Am J Prev Med*. 2013;44(2):158-63.

Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary Table: Frequency of recommendations according to the key components of the content analysis framework* (Fig.1).

Supplementary Figure 1: Overview of data extraction during document analysis.

Supplementary Figure 2: Content analysis framework.